IN THE CLAIMS

Please cancel claims 1-12 without prejudice

Please add claims 13-24 as follows:

13. Process for measuring three-dimensional objects in a three-dimensional environment, consisting of taking at least one image by at least one camera and creating a representation of the environment based on an analysis of the image, characterized in that the analysis comprises detection of discontinuities in the appearance of the image, a combination of discontinuities detected at geometric contours defined on the image by parameters, an adjustment of contours to discontinuities by varying the parameters, an estimate of the shape and position in the environment of geometric objects projecting onto the image according to the said contours, the representation showing the said objects.

14. Measurement process according to claim 13, characterized in that the geometric contours include the dot, the straight line, the ellipse, and objects include a circle, cylinder, straight line and dot.

15. Process according to claim 14, characterized in that the parameters include plane Cartesian coordinates, angles and lengths.

16. Process according to claim 13, characterized in that it converts images into potential images of image dots, the potential being calculated to give an extreme value at discontinuities, in order to detect appearance discontinuities in the image.

17. Process according to claim 16, characterized in that the potential includes a term taking account of areas with very low intensity of shades of gray on the images.

18. Process according to claim 13, characterized in that the estimated position of objects is improved by estimating the position of the camera based on the representation of the environment and the camera image.

19. Process according to claim 13, characterized in that it includes initial estimates of object or camera positions starting from information input manually or in a computer description file.

20. Process according to claim 13, characterized in that it includes a repetition of detection, combination, adjustment and estimating steps for each image, the representation of the environment being corrected by object position corrections for each image.

21. Process according to claim 20, characterized in that the contours of objects in the representation of the environment are projected in each new image before detection of discontinuities in the appearance of the said new image.

22. Process according to claim 21, characterized in that the said projected contours are adjusted on image appearance discontinuities.

23. Process according to claim 20, characterized by additions of geometric contours and geometric objects projecting onto the said contours for at least some of the new images.

24. Process according to claim 18, characterized by a correction to the position of objects, estimating positions of the projection of objects on the images based on the positions of the camera when the corresponding images were taken, and adjusting the estimated projection positions using the projection positions measured on the images.